

DEADLINE

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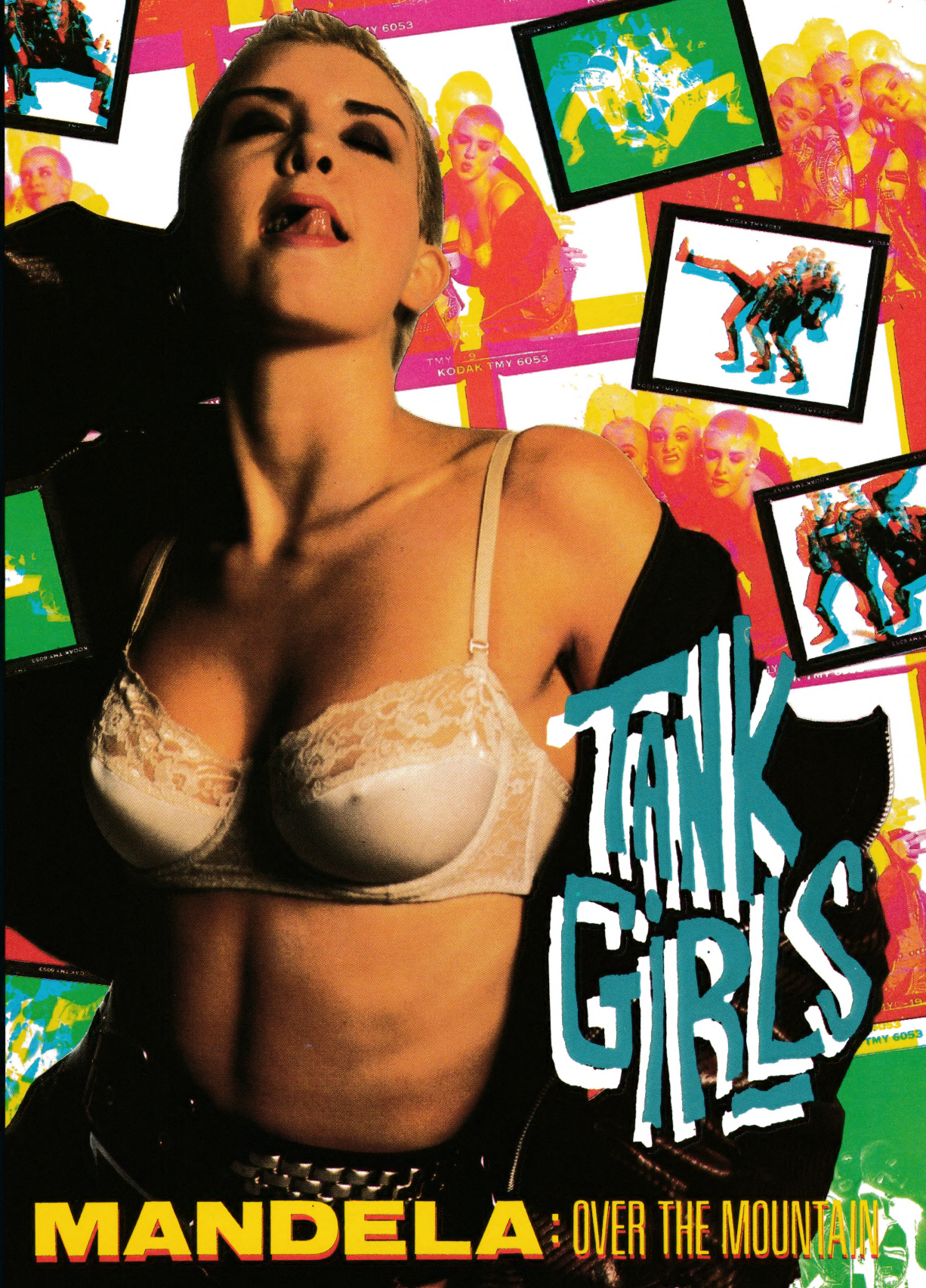
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DEADLINE

GET WONKY — GET WIZE

ALAN MOORE  
& BILL SIENKIEWICZ

Big  
numbers



TANK  
GIRLS

MANDELA: OVER THE MOUNTAIN



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I first spoke to Bill Sienkiewicz about what was then known as 'The Mandelbrot Set' about a year ago. It was his latest collaboration with writer Alan Moore (famed author of 'Watchmen', 'Swamp Thing', 'Brought To Light', and thousands of other wonderful comic books and stories) and was concerned with the strange and delicate matter of fractal mathematics, the science of chaos. Since then, 'The Mandelbrot Set' has undergone a name change and is re-emerging under the slightly more accessible title of 'Big Numbers', one which doesn't invite bemused inquiries such as "Mandelbrot? What's that?" and consequently sits comfortably alongside everything that Moore and Sienkiewicz have tried to do with this curious, fascinating and beautiful piece of work. Which is mainly to make it attractive and available to EVERYBODY. Not just comic buffs, not just adolescents, but everyone, including your Great Aunt Hilda.

So what the hell is fractal mathematics? Well, it's not a simple subject to explain, indeed, Alan and Bill would be writing volume upon volume if they'd attempted an in depth study. Basically it's a new science, one which transcends divisions between art, philosophy, religion, science, economics, anything in fact, and it thus provides us with a new way of looking at the world around us. If that wasn't too clear, listen to Bill's explanation, "Fractals is a way of finding out that there is a rhythm and formula to chaos, that there is an order to it. If you have a brain wave pattern which is rhythmic and one which is all over the place, which would you want? I assumed the rhythmic one at first, but when you think about it it'd be the one gone haywire. Because the mind and memory is fractal it doesn't go in a straight line, there's points out all over the place, so when you think about the first time you had a cigarette and you remember it was at a football match, you might think of a rainy day, and then you might think of an accident you saw when you were thirteen. It doesn't work in straight lines, it jumps, but in order for the mind to grab hold of those lines there has to be a chaos to it and yet an order at the same time.

The heart and the lungs are rhythmic and the mind is chaotic and when you take something like cocaine it throws the mind into rhythm and the heart and lungs into chaos. It throws everything around. And that's what we're dealing with in Big Numbers.

"It's based on a tale through history and the more things change the more they stay the same. There's about forty five characters in it and I really want to approach it so the story becomes the most important thing, and I want people to really get to know the characters. I suppose after Stray Toasters ending on the note it did, I'm wanting people to embrace a life affirming thing, as opposed to something which is tearing it all down. As a way of communicating it's like saying – well, I love people and I may not like certain things about them, but it's all about connecting. I think that Big Numbers will bring about more of that."

And how has it been working with such a formidably inspired and inspiring writer as Alan Moore? The meeting of these two forces has already given us the disturbing docudrama 'Brought To Light' so obviously the partnership works, but has it been difficult in any way?

"My idea of Alan is that he's very much in control and controlling. Now that's not a negative thing, but I've noticed most of the people that have worked with him trust him implicitly and go along with what he does. It's almost like they're working for him rather than with him. I like to throw things at him that he hasn't had to deal with before. I tend to be more abstract, like I'm juggling, whereas he's more set, so I like to open him up a little. With him I actually do become a little more controlled though, so it doesn't look ridiculous – but he's collapsed a little too, that's where opposites work!"

More recently I had the chance to find out more about this intriguing book when I spoke to the author, Alan Moore. Evidently he intends this work to have a deep effect on the comic's audience, and furthermore, he intends to reach a broader readership than ever before. He is full of nothing but the purest enthusiasm for 'Big Numbers' and is

convinced it's the best thing he's ever done. He believes fractals to be a key for dealing with the state the world is in today, and he has every faith in his own particular method of involving the rest of the world – his comic (Which, I should say, is to be published as twelve separate volumes by Alan's own publishing company, Mad Love).

But first, the name change. Why was 'The Mandelbrot Set' renamed to 'Big Numbers'?

"After we decided to call it 'The Mandelbrot Set', we thought we should pay Dr Mandelbrot (the originator of the theory) the respect of asking him if we could use his name or not. So we wrote to him and got a lovely letter back, saying that although normally his basic attitude is that fractal mathematics should be explored as much as possible for educational and entertainment value and that normally he'd be only too pleased to give us his permission, at the moment there's some controversy going on within the weird sort of cryptic inner world of mathematicians. Apparently there's been an awful lot of conservative elements within the maths community attacking fractals in general and Mandelbrot in particular, basically on the grounds that he's seen as something of an egomaniac and self publicist. I wouldn't say this myself, but basically any popularisation of fractal mathematics is being held up as proof of it's inherent worthlessness. Unfortunately this happens in the scientific community, it sets its face against people and ideas. People get laughed out of their time and I wouldn't want to see that happen to fractals. In retrospect 'Big Numbers' is probably a better title because it's got more range to it. It's not so strange and off putting."

Accessibility being THE word, the new title is, as Alan says, a healthy, if unpremeditated and enforced move. Immediately the comic book sounds less awesome, more of the world than some esoteric backwater. And when you consider what Alan is trying to do – make a new branch of science relevant and applicable for everyone in order to make sense of what is currently happening in the world by introducing it in a still largely unacceptable format – an easy title could make all the difference! Perhaps the best place to start is with Alan's own rundown of fractal mathematics, which is slightly more illuminating, if greater in length than Bill's description. Are

you sitting comfortably? You'd better be!

"The best way to describe it is if you have a sheet of paper and you draw a line on it, in mathematical terms that line is said to be one dimensional. It's width is ignored, it's said to just have length. Now if you were to draw that line with lots of little crinkles in it, it would cover more of the paper, and if you made it incredibly crinkly, it might cover all of the paper. Now at that point the line would not quite be two dimensional, but it would be more than one dimensional. The same thing applies if you get a sheet of paper that's two dimensional and crumple it into a ball. Balls are three dimensional solids, but the sheet of paper is a two dimensional object that has been crumpled to almost become a three dimensional object. So what you have to say is that the crinkled line is one and a half dimensional the ball of paper is two and a half dimensional. Once you've got that concept of half dimensions and fractions of dimensions, that opens up a whole new area of possible geometry, so you can start to explore the rules of a geometry that allows for a second and a half dimension. People who are starting to explore this are beginning to find that equations that dealt with fractal dimensions would generate these peculiar shapes. Then they started to find out that most random shapes that occurred in nature were exactly similar to the fractal shapes being generated by their computers, which tends to indicate that things that we'd previously considered to be random and chaotic and turbulent are, in fact, perfect expressions of a higher form of geometry that we'd previously not been able to appreciate".

Take clouds for instance, their shapes appear to be completely chaotic, but when looked at from the point of view of fractal mathematics, chaos means something different. In fact fractal mathematics makes possible different ways of looking at everything. In hard, practical terms, it's already starting to reverse the trend towards specialisation, something which has been the cause of consternation within scientific circles for some time.

"Scientists were becoming more and more specialised and eventually people were worried that specialisation would get so intense that you'd have everyone knowing more and more about less and less", explains Alan, "What's happening now is that meteorologists, mathematicians, biologists and



## — Big Numbers. Liz Evans gets confused.

social scientists are realising they all have a lot in common. Because fractals and fractal patterns run through economics and the weather alike, all these fields are actually connected and the desire to specialise is ended. The best thing to do is to study as many fields as possible”.

Which is what Mandelbrot himself did. He apparently moved through many different fields comparing them, and by doing this he began to put some of his ideas as to the nature of fractal geometry and what it was, together. Big Numbers is picking up the thread by showing a new way of perceiving our communities.

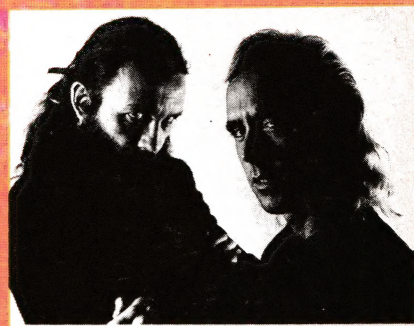
Taking a step back from the world and its situation today, it isn't exactly difficult to spot the great huge mess everything's becoming. Alan Moore believes we are caught up in a stage of chaos and turbulence in our political and economic systems which hasn't happened since the industrial age superseded the agricultural. Big

Numbers is therefore a very optimistic book, because it makes it clear that we can deal with this, if we have the right method.

“Society has a general underlying unease because things are happening very very rapidly, and this leads to chaos in our political systems, economic systems, emotional lives and relationships with people. I very much believe that during these times we are at the point of exchange between the industrial society and what comes

after. In fractal mathematics there's a very useful concept called a phase transition period. For example, if you were an alien from another planet and you were looking at water without having seen it before, you could not possibly predict the properties of steam. That's because what happens between water and steam is a point of phase transition. It's where one thing becomes something else after hitting a period of intense, incredible turbulence. With water the phase transition point is boiling point. What I want to do with Big Numbers is to catch a snapshot of all that steam and heat and water in motion, a snapshot of society when it does hit boiling point, and try and make sense of it”.

In order to write Big Numbers, Alan drew up a flow chart of characters, plots and eventually a conclusion. He describes it as being like a tapestry, portraits of the individuals. One is a history teacher who provides the historical angle, one is a kid interested in mathematics who provides the fractals, one is a man who believes he's from Neptune, thus offering the social angle; it's all here, and it's all relevant. Alan's concentrated on sections of society who are usually under-represented, old people and children are all to often pushed out of the centre by pretty young things whether on television, in film or in books. Big Numbers however, is about real people.



# MASSIVE MATHEMATICS





a feminist in some way, but what about the average person, not particularly attractive, going out to work, looking after kids, cooking their husband's dinner? Don't they have a value? We've put a really high premium on making Big Numbers accessible, I mean my mum likes this!"

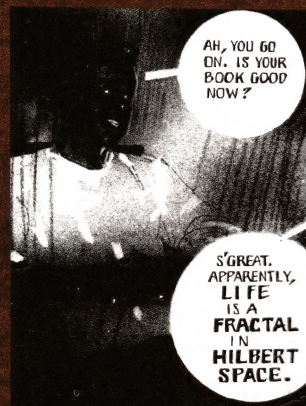
As far as a plot goes, Big Numbers doesn't really have one. The content focuses mainly on the characters and their lives rather than a thriller tale. What plot there is, is centred around the construction of a shopping mall in the community and the effect this has upon the people. If that's not accessibility, tell me please what is!

"The shopping mall enables us to talk about the community in crisis. It's not dramatic, but very slow and subtle. If you see a community being eroded and worn away it enables you to say how it's changing and we needed an agent for change in the story. Given the predominance of mall culture, it seemed to be a good choice, and now in that eerie way that reality has of imitating art, the area that we have designated in Northampton for the mall site has gradually become covered in those Toys R Us type places.

"The mall is perfect symbol for the apex of industrial society. That's how industrial society ends up, with a bunch of hypnotised zombies trudging round over the gleaming tiles, under that weird lighting with that muzak playing and a glazed look in their eyes. I don't think that this is the end of civilisation though. I think there are certain trends in the world, in technology, science, art, people's lives and hearts and minds and everything else that will make that vision of the future

obsolete almost instantly. Like I say the world's changing very fast and none of us can predict where it's going, but I want to show in Big Numbers the crosspoint between one sort of society and another". I have enough faith in the man to believe that that's just what he will do – perfectly with Bill Sienkiewicz, who's artwork is, according to Alan, the best work he's ever done. He's gone back to a naturalistic approach, in keeping with the naturalistic dialogue, meaning Big Numbers should be as readable as Neighbours is watchable. So of course, there's plenty of humour...

"It's very funny, it's a laugh, a comedy which is also quite tragic in places. The models we've been looking at have been people like Alan Bleasdale and Alan Bennett, who can say heartbreaking things in a really engrossing and funny fashion. They can talk about massive human dramas by saying something very ordinary. That's the sort of territory that I want to set Big Numbers in, where you've got the richness of comedy and tragedy and mundane existence. On one level Big Numbers is trying to make comics' fans realise that they don't have to be bitten by a radioactive spider or born with a mutant X gene to be interesting, that everybody around them is much more interesting than any superhuman. Superheroes are very flat characters who demand simple motivations, driven psychotic vigilantes can only have two dimensions, they are not as interesting as the person you'd meet at the bus stop. I've always been against the idea of escapism even when I was doing things like Swamp Thing. Now I'm asking – why have the superhero in the first place? Why not just talk directly? And that's where I am now. I've gone completely off fantasy and science fiction. I've got to the stage where the real world seems so fabulous and fascinating and intricate and marvellous, that it almost seems an insult to reality to invent anything".



Did this man really write 'Watchmen'?



"I'm glad it's not a teenage-focused book, that would give it a different feel to the one I'm after. I'm not into the idea of youth for youth's sake, that idea was invented by ad-men in the fifties and it's not a concept that's always been around. There's quite a lot of middle aged and old people and children in this book, and that's good because they're a part of the spectrum of society not often looked at, but often laughed at. It's all right to do a book about say, attractive young women doing something, then you can claim to be